

CLAIMS

1. A measuring device for acoustic measurement in an ear canal, the device comprising a probe for insertion into an ear canal in a sealing manner and having
5 an opening for transport of air into or out of the ear canal, the device further comprising a pump for providing a pressure difference in relation to a surrounding atmospheric pressure, the pump comprising a housing with openings for inlet and/or outlet, where within the housing a piston element having piezo electric properties is disposed, where one opening in the pump is operatively
10 connected to the opening in the probe.
2. A measuring device according to claim 1, where in connection with the inlet opening and the outlet opening valve elements are provided for controlling the inlet and the outlet and where the valve elements have piezo electric properties.
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3. A measuring device according to claim 1 or 2, where the pump is adapted to operate at a frequency above 18 kHz, preferably above 20 kHz.
4. A measuring device according to claim 1, 2 or 3, where control electronics are
20 provided for controlling valve positions in relation to the piston movement in such a manner that in one mode of operation a pressure above the surrounding pressure may be obtained and in another mode of operation a pressure below the surrounding pressure may be obtained.
- 25 5. A measuring device according to any of the claims 1-4, where a pressure operated passive valve element is provided in connection with the pressurized parts of the device.
6. A pump having a housing with an inlet opening and an outlet opening and
30 disposed within the housing a piston element having piezo electric properties, where in connection the inlet opening and the outlet opening valve elements are provided for controlling the inlet and the outlet, where the valve elements are valve elements having piezo electric properties.

7. A pump according to claim 6, where the pump is adapted to operate at a frequency above 18 kHz, preferably above 20 kHz.